

1       What is claimed is:

2       1. A system for delivering electronic programming to a user,

3           the system comprising:

4                a printed matter having at least one sensor and a  
5                   transmitter for transmitting a coded signal in  
6                   response to an actuation of said sensor;  
7                an intelligent controller having associated therewith a  
8                   receiver for receiving said coded signal and a  
9                   means for accessing programming material; and  
10              a display unit for presenting said programming  
11                   material;

12           wherein said user actuates said sensor to cause said  
13                   intelligent controller to access said programming  
14                   material and said display unit to present said  
15                   programming material to said user.

16       2. A system as defined in claim 1 wherein said sensor comprises  
17           a touch sensor.

18       3. A system as defined in claim 1 wherein said sensor comprises  
19           a capacitive touch sensor.

20       4. A system as defined in claim 1 wherein said sensor comprises  
21           a conductive touch sensor.

22       5. A system as defined in claim 1 wherein said sensor comprises

1           a page sensor.

2       6. A system as defined in claim 1 wherein said printed matter

3           includes both a page sensor and a touch sensor.

4       7. A system as defined in claim 1 wherein said printed matter

5           includes a pad having a plurality of touch sensors.

6       8. A system as defined in claim 1 wherein said printed matter

7           includes a plurality of pads, each having a plurality of

8           touch sensors.

9       9. A system as defined in claim 1 wherein said intelligent

10           controller includes a microprocessor.

11      10. A system as defined in claim 1 wherein said intelligent

12           controller has associated therewith a memory means for

13           storing programming material.

14      11. A system as defined in claim 10 wherein said memory means

15           comprises a magnetic disk.

16      12. A system as defined in claim 10 wherein said memory means

17           comprises a PCMCIA card.

18      13. A system as defined in claim 10 wherein said memory means

19           comprises a flash RAM.

20      14. A system as defined in claim 10 wherein said memory means

21           comprises a cache.

22      15. A system as defined in claim 10 wherein said memory means

1                   comprises a CD-ROM.

2       16. A system as defined in claim 10 wherein said memory means is  
3                   selected from the group consisting of: a ROM; a WORM disk; a  
4                   floppy disk; a multi-layer optical disk; a magneto-optical  
5                   disk; an IC card; a magnetic bubble memory; a sequential  
6                   access memory; a magnetic tape; a magnetic drum; a magneto-  
7                   optical drum; a static RAM; and a dynamic RAM.

8       17. A system as defined in claim 1 wherein said intelligent  
9                   controller includes a removable memory means.

10      18. A system as defined in claim 17 wherein said printed matter  
11                  and said removable memory means are supplied to, or  
12                  purchased by, the user as a set.

13      19. A system as defined in claim 1 wherein said means for  
14                  accessing programming material operates via a data link.

15      20. A system as defined in claim 19 wherein said data link  
16                  comprises a telephone line.

17      21. A system as defined in claim 19 wherein said data link  
18                  comprises a computer network.

19      22. A system as defined in claim 19 wherein said data link  
20                  comprises an ISDN network.

21      23. A system as defined in claim 19 wherein said data link  
22                  comprises an Ethernet network.

- 1 24. A system as defined in claim 19 wherein said data link
- 2 comprises a CATV line.
- 3 25. A system as defined in claim 1 wherein said intelligent
- 4 controller has associated therewith a buffer for temporarily
- 5 storing the programming material.
- 6 26. A system as defined in claim 1 wherein said intelligent
- 7 controller includes means for decompressing compressed
- 8 programming material.
- 9 27. A system as defined in claim 1 wherein said display unit
- 10 comprises a video display.
- 11 28. A system as defined in claim 1 wherein said display unit
- 12 comprises an audio transducer.
- 13 29. A system as defined in claim 1 wherein said display unit
- 14 comprises a flat panel display.
- 15 30. A system as defined in claim 29 wherein said flat panel
- 16 display is embedded within said printed matter.
- 17 31. A system as defined in claim 1 wherein said display unit has
- 18 associated therewith a buffer for temporarily storing
- 19 programming material.
- 20 32. A system as defined in claim 1 wherein said display unit has
- 21 associated therewith means for decompressing compressed
- 22 programming material.

- 1       33. A system as defined in claim 1 wherein said display unit
- 2                  comprises a CATV converter, or wireless cable converter, and
- 3                  a television set coupled thereto.
- 4        34. A system as defined in claim 1 wherein said display unit
- 5                  comprises a personal computer.
- 6        35. A system as defined in claim 34 wherein said personal
- 7                  computer includes a CD-ROM for storing programming material.
- 8        36. A system as defined in claim 34 wherein said personal
- 9                  computer includes means for decompressing compressed
- 10                 programming material.
- 11      37. A system as defined in claim 1 wherein said intelligent
- 12                 controller and said display unit each comprise portions of a
- 13                 personal computer.
- 14      38. A system as defined in claim 1 wherein said programming
- 15                 material includes entertainment programming.
- 16      39. A system as defined in claim 1 wherein said programming
- 17                 material includes educational programming.
- 18      40. A system as defined in claim 1 wherein said programming
- 19                 material supplements information contained in said printed
- 20                 matter.
- 21      41. A system as defined in claim 1 wherein said programming
- 22                 material includes commercial programming.

- 1       42. A system as defined in claim 1 wherein said programming
- 2               material includes promotional programming.
- 3       43. A system as defined in claim 1 wherein said programming
- 4               material includes informational programming.
- 5       44. A system as defined in claim 1 wherein said transmitter and
- 6               receiver communicate via an energy pathway.
- 7       45. A system as defined in claim 44 wherein said energy pathway
- 8               comprises a conductive cable.
- 9       46. A system as defined in claim 44 wherein said energy pathway
- 10               comprises an optical cable.
- 11      47. A system as defined in claim 44 wherein said energy pathway
- 12               comprises a capacitively coupled link.
- 13      48. A system as defined in claim 1 wherein said transmitter and
- 14               receiver communicate via a wireless RF link.
- 15      49. A system as defined in claim 1 wherein said transmitter and
- 16               receiver communicate via an IR link.
- 17      50. A system for displaying programming to a user, the system
- 18               comprising:
  - 19               a printed matter having at least one machine
  - 20                       recognizable feature;
  - 21               a feature recognition unit having associated therewith
  - 22                       a means for recognizing said feature and a

1                   'transmitter for transmitting a coded signal in  
2                   response to the recognition of said feature;  
3                   an intelligent controller having associated therewith a  
4                   receiver for receiving said coded signal and means  
5                   for accessing programming material; and  
6                   a display unit for presenting said programming  
7                   material;  
8                   wherein said recognition unit, in response to the  
9                   recognition of said feature, causes said  
10                  intelligent controller to access said programming  
11                  material and said display unit to execute or  
12                  display said programming material.

13        51. A system as defined in claim 50 wherein said intelligent  
14                  controller includes a microprocessor.

15        52. A system as defined in claim 50 wherein said intelligent  
16                  controller has associated therewith a memory means for  
17                  storing programming material.

18        53. A system as defined in claim 52 wherein said memory means  
19                  comprises a magnetic disk.

20        54. A system as defined in claim 52 wherein said memory means  
21                  comprises a PCMCIA card.

22        55. A system as defined in claim 52 wherein said memory means

1           comprises a flash RAM.

2       56. A system as defined in claim 52 wherein said memory means

3           comprises a cache.

4       57. A system as defined in claim 52 wherein said memory means

5           comprises a CD-ROM.

6       58. A system as defined in claim 52 wherein said memory means is

7           selected from the group consisting of: a ROM; a WORM disk; a

8           floppy disk; a multi-layer optical disk; a magneto-optical

9           disk; an IC card; a magnetic bubble memory; a sequential

10          access memory; a magnetic tape; a magnetic drum; a magneto-

11          optical drum; a static RAM; and a dynamic RAM.

12       59. A system as defined in claim 50 wherein said intelligent

13          controller includes a removable memory means.

14       60. A system as defined in claim 59 wherein said printed matter

15          and said removable memory means are supplied to, or

16          purchased by, the user as a set.

17       61. A system as defined in claim 50 wherein said means for

18          accessing programming material operates via a data link.

19       62. A system as defined in claim 61 wherein said data link

20          comprises a telephone line.

21       63. A system as defined in claim 61 wherein said data link

22          comprises a computer network.

- 1       64. A system as defined in claim 61 wherein said data link
- 2                  comprises an ISDN network.
- 3        65. A system as defined in claim 61 wherein said data link
- 4                  comprises an Ethernet network.
- 5        66. A system as defined in claim 61 wherein said data link
- 6                  comprises a CATV line.
- 7        67. A system as defined in claim 50 wherein said intelligent
- 8                  controller has associated therewith a buffer for temporarily
- 9                  storing the programming material.
- 10      68. A system as defined in claim 50 wherein said intelligent
- 11                  controller includes means for decompressing compressed
- 12                  programming material.
- 13      69. A system as defined in claim 50 wherein said display unit
- 14                  comprises a video display.
- 15      70. A system as defined in claim 50 wherein said display unit
- 16                  comprises an audio transducer.
- 17      71. A system as defined in claim 50 wherein said display unit
- 18                  comprises a flat panel display.
- 19      72. A system as defined in claim 71 wherein said flat panel
- 20                  display is embedded within said printed matter.
- 21      73. A system as defined in claim 50 wherein said display unit
- 22                  has associated therewith a buffer for temporarily storing

1           programming material.

2       74. A system as defined in claim 50 wherein said display unit  
3           has associated therewith means for decompressing compressed  
4           programming material.

5       75. A system as defined in claim 50 wherein said display unit  
6           comprises a CATV converter, or wireless cable converter, and  
7           a television set coupled thereto.

8       76. A system as defined in claim 50 wherein said display unit  
9           comprises a personal computer.

10      77. A system as defined in claim 76 wherein said personal  
11           computer includes a CD-ROM for storing programming material.

12      78. A system as defined in claim 76 wherein said personal  
13           computer includes means for decompressing compressed  
14           programming material.

15      79. A system as defined in claim 50 wherein said intelligent  
16           controller and said display unit each comprise portions of a  
17           personal computer.

18      80. A system as defined in claim 50 wherein said programming  
19           material includes entertainment programming.

20      81. A system as defined in claim 50 wherein said programming  
21           material includes educational programming.

22      82. A system as defined in claim 50 wherein said programming

1 material supplements information contained in said printed  
2 matter.

3 83. A system as defined in claim 50 wherein said programming  
4 material includes commercial programming.

5 84. A system as defined in claim 50 wherein said programming  
6 material includes promotional programming.

7 85. A system as defined in claim 50 wherein said programming  
8 material includes informational programming.

9 86. A system as defined in claim 50 wherein said transmitter and  
10 receiver communicate via an energy pathway.

11 87. A system as defined in claim 86 wherein said energy pathway  
12 comprises a conductive cable.

13 88. A system as defined in claim 86 wherein said energy pathway  
14 comprises an optical cable.

15 89. A system as defined in claim 86 wherein said energy pathway  
16 comprises a capacitively coupled link.

17 90. A system as defined in claim 50 wherein said transmitter and  
18 receiver communicate via a wireless RF link.

19 91. A system as defined in claim 50 wherein said transmitter and  
20 receiver communicate via an IR link.

21 92. A system as defined in claim 50 wherein said feature  
22 comprises a bar code.

1       93. A system as defined in claim 50 wherein said feature  
2                  comprises an invisible bar code.

3       94. A system as defined in claim 50 comprises wherein said  
4                  feature comprises a magnetic code.

5       95. A system as defined in claim 50 wherein said feature  
6                  comprises printed indicia.

7       96. A system as defined in claim 50 wherein said recognition  
8                  unit comprises a hand-held unit.

9       97. A system as defined in claim 96 wherein said hand-held  
10                 recognition unit includes a CCD camera.

11      98. A system as defined in claim 96 wherein said hand-held  
12                 recognition unit includes a bar code reader.

13      99. A system as defined in claim 96 wherein said hand-held  
14                 recognition unit comprises a magnetic detector.

15     100. A system as defined in claim 96 wherein said hand-held  
16                 recognition unit comprises a scanner/mouse.

17     101. A system for delivering electronic programming to a user,  
18                 the system comprising:  
19                         a printed matter having associated therewith at least  
20                         one sensor, a controller responsive to an  
21                         actuation of said sensor, and a transmitter  
22                         responsive to said controller for transmitting a

coded signal; and

a display unit having associated therewith a receiver

for receiving said coded signal, means for

accessing programming material in response

thereto, and means for displaying or executing

said programming material; and

wherein said user actuates said sensor to cause said

programming material to be accessed and displayed

or executed.

10 102. A system as defined in claim 101 wherein said controller  
11 includes a microprocessor.

12 103. A system as defined in claim 101 wherein said display unit  
13 further has associated therewith a memory means for storing  
14 programming material.

17 105. A system as defined in claim 103 wherein said memory means  
18 comprises a PCMCIA card.

19 106. A system as defined in claim 103 wherein said memory means

21 107. A system as defined in claim 103 wherein said memory means

1       108. A system as defined in claim 103 wherein said memory means  
2                  comprises a CD-ROM.

3       109. A system as defined in claim 101 wherein said memory means  
4                  is selected from the group consisting of: a ROM; a WORM  
5                  disk; a floppy disk; a multi-layer optical disk; a magneto-  
6                  optical disk; an IC card; a magnetic bubble memory; a  
7                  sequential access memory; a magnetic tape; a magnetic drum;  
8                  a magneto-optical drum; a static RAM; and a dynamic RAM.

9       110. A system as defined in claim 101 wherein said further has  
10                  associated therewith a removable memory means.

11      111. A system as defined in claim 110 wherein said printed matter  
12                  and said removable memory means are supplied to, or  
13                  purchased by, the user as a set.

14      112. A system as defined in claim 101 wherein said means for  
15                  accessing programming material operates via a data link.

16      113. A system as defined in claim 112 wherein said data link  
17                  comprises a telephone line.

18      114. A system as defined in claim 112 wherein said data link  
19                  comprises a computer network.

20      115. A system as defined in claim 112 wherein said data link  
21                  comprises an ISDN network.

22      116. A system as defined in claim 112 wherein said data link

1 , comprises an Ethernet network.

2 117. A system as defined in claim 112 wherein said data link  
3 comprises a CATV line.

4 118. A system as defined in claim 101 wherein said controller has  
5 associated therewith a power-down or slow-down circuit for  
6 reducing power consumption in said controller.

7 119. A system as defined in claim 101 wherein said controller has  
8 associated therewith a solar cell for powering said  
9 controller..

10 120. A system as defined in claim 101 wherein said display unit  
11 comprises a video display.

12 121. A system as defined in claim 101 wherein said display unit  
13 comprises an audio transducer.

14 122. A system as defined in claim 101 wherein said display unit  
15 comprises a flat panel display.

16 123. A system as defined in claim 122 wherein said flat panel  
17 display is embedded within said printed matter.

18 124. A system as defined in claim 101 wherein said display unit  
19 has associated therewith a buffer for temporarily storing  
20 programming material.

21 125. A system as defined in claim 101 wherein said display unit  
22 has associated therewith means for decompressing compressed

1           programming material.

2       126. A system as defined in claim 101 wherein said display unit

3           comprises a CATV converter, or wireless cable converter, and

4           a television set coupled thereto.

5       127. A system as defined in claim 101 wherein said display unit

6           comprises a personal computer.

7       128. A system as defined in claim 127 wherein said personal

8           computer includes a CD-ROM for storing programming material.

9       129. A system as defined in claim 127 wherein said personal

10           computer includes means for decompressing compressed

11           programming material.

12       130. A system as defined in claim 101 wherein said controller and

13           said display unit each comprise portions of a personal

14           computer.

15       131. A system as defined in claim 101 wherein said programming

16           material includes entertainment programming.

17       132. A system as defined in claim 101 wherein said programming

18           material includes educational programming.

19       133. A system as defined in claim 101 wherein said programming

20           material supplements information contained in said printed

21           matter.

22       134. A system as defined in claim 101 wherein said programming

1 material includes commercial programming.

2 135. A system as defined in claim 101 wherein said programming  
3 material includes promotional programming.

4 136. A system as defined in claim 101 wherein said programming  
5 material includes informational programming.

6 137. A system as defined in claim 101 wherein said transmitter  
7 and receiver communicate via an energy pathway.

8 138. A system as defined in claim 137 wherein said energy pathway  
9 comprises a conductive cable.

10 139. A system as defined in claim 137 wherein said energy pathway  
11 comprises an optical cable.

12 140. A system as defined in claim 137 wherein said energy pathway  
13 comprises a capacitively coupled link.

14 141. A system as defined in claim 101 wherein said transmitter  
15 and receiver communicate via a wireless RF link.

16 142. A system as defined in claim 101 wherein said transmitter  
17 and receiver communicate via an IR link.

18 143. A method of providing, accessing or utilizing electronic  
19 media services, the method comprising the steps of:

20 providing a printed matter having at least one sensor  
21 associated therewith;

22 providing or programming an intelligent controller to,

1           in response to an actuation of said sensor,  
2           perform a pre-programmed command; and  
3           executing said pre-programmed command to access or  
4           control an electronic media.

5   144. A method of providing electronic programming material, the  
6       method comprising the steps of:

7           providing a printed matter to a potential customer;  
8           pre-programming an intelligent controller to access or  
9           control the transmission of electronic programming  
10          material in response to an event wherein the  
11          customer interacts with the printed matter in a  
12          particular manner; and  
13          displaying or executing said programming material in  
14          response to the intelligent controller.

15   145. A method as defined in claim 144 wherein said printed matter  
16       comprises a low-cost, throw away publication.

17   146. A method as defined in claim 144 wherein said customer  
18       utilizes a feature recognition unit to interact with said  
19       printed matter.

20   147. A method of providing or accessing shop-at-home services,  
21       the method including the steps of:

22       incorporating within a printed catalogue at least one

1                         \*sensor or machine-recognizable feature;  
2                         programming a controller to execute a pre-programmed  
3                         command in response to an event wherein a customer  
4                         interacts with said sensor or feature; and  
5                         responding to the execution of said pre-programmed  
6                         command.

7       148. A method as defined in claim 147 wherein responding  
8                         comprises presenting or delivering commercial programming to  
9                         the customer.

10      149. A method as defined in claim 147 wherein responding  
11                 comprises presenting or delivering promotional programming  
12                 to the customer.

13      150. A method as defined in claim 147 wherein responding  
14                 comprises contacting the customer by telephone.

15      151. A method as defined in claim 147 wherein responding  
16                 comprises providing an electronic menu to the customer.

17      152. A method as defined in claim 151, further comprising the  
18                 step of responding to the customer's menu selection(s).

19      153. An improved method of instruction, said method including the  
20                 steps of:  
21                         providing a printed textbook having at least one sensor  
22                         or machine-recognizable feature associated

1 therewith;

2 providing a means, distinct from said textbook, for

3 executing a pre-programmed command in response to

4 an event wherein a reader of the textbook

5 interacts with said sensor or feature; and

6 responding to the execution of said command.

7 154. An improved method of instruction as defined in claim 153

8 wherein responding comprises: causing or controlling the

9 delivery or presentation of multimedia material or other

10 information related to that in the textbook to the reader.

11 155. An improved method of instruction as defined in claim 153

12 wherein responding comprises: forming a communication link

13 between the reader and a tutor or consultant.

14 156. A low cost, throw-away printed matter useful for accessing

15 electronic media services, said printed matter including:

16 at least one sensor; and

17 means, responsive to an actuation of said sensor, for

18 transmitting a coded signal indicative of said

19 sensor.

20 157. A feature recognition unit useful, in combination with a

21 printed matter, for accessing electronic media services,

22 said recognition unit comprising:

1           means for recognizing features on said printed matter;

2           and

3           means, responsive to the recognition of a feature, for  
4           transmitting a coded signal indicative of said  
5           recognized feature.

6       158. A feature recognition unit as defined in claim 157 wherein  
7           said means for recognizing reads bar codes.

8       159. A feature recognition unit as defined in claim 157 wherein  
9           said means for recognizing reads printed indicia.

10      160. A feature recognition unit as defined in claim 157 wherein  
11           said means for recognizing reads magnetic codes.

12      161. A feature recognition unit as defined in claim 157 wherein  
13           said means for recognizing comprises a CCD camera.

14      162. A feature recognition unit as defined in claim 157 wherein  
15           said means for recognizing comprises a bar code reader.

16      163. A feature recognition unit as defined in claim 157, further  
17           including a microprocessor.

18      164. A system for delivering an electronic advertisement to a  
19           user, the system comprising:

20           a printed advertisement having associated therewith at  
21           least one sensor or machine-recognizable feature,  
22           a controller, responsive to an actuation of said

sensor or a recognition of said machine-  
recognizable feature, and a transmitter,  
responsive to said controller, for transmitting a  
coded signal; and

a display unit including a receiver for receiving said coded signal and means for providing said user with said electronic advertisement related to said printed advertisement.

## 165. A system for delivering information services to a user,

the system comprising:

a printed reference having associated therewith at least one sensor or machine-recognizable feature, a controller, responsive to an actuation of said sensor or a recognition of said machine-recognizable feature, and a transmitter, responsive to said controller, for transmitting a coded signal; and

a display unit including a receiver for receiving said coded signal and means for providing said user with said information services related to said printed reference.

<sup>22</sup> 166. A system for delivering information services as defined in

1 claim 165 wherein said display unit is contained within a  
2 personal communicator device.

3 167. A system for delivering information services as defined in  
4 claim 165 wherein said display unit is contained within a  
5 remote pager device.